CONTINGENT EXTENSION REQUEST

If this communication is filed after the shortened statutory time period had elapsed and no separate Petition is enclosed, the Commissioner of Patents and Trademarks is petitioned, under 37 CFR 1.136(a), to extend the time for filing a response to the outstanding Office Action by the number of months which will avoid abandonment under 37 CFR 1.135. The fee under 37 CFR 1.17 should be charged to our Deposit Account No. 50-2215.

REMARKS

The allowance of claims 24, 29 and 30 and the indication that claims 4, 6-10, 13-18, 27 and 28 would be allowable in independent form is noted with appreciation.

All prior rejections have been withdrawn and a new rejection of claims 1-3, 5, 12, 19-23, 25 and 26 under 35 U.S.C. § 102 or § 103 over the previously cited, but not previously applied, Gros patent is respectfully traversed.

Before the present invention, conductive inks and coatings were primarily based on solvent or water borne-thermal evaporated drying or on 2-component cross linking technology. While those compositions had high conductivity, they were slow drying and not suitable for high speed printing presses, as well as having other disadvantages. Energy cure systems had been made but these typically have significantly higher resistivity and reduced conductivity values compared to solvent or water-borne evaporated drying products. To achieve improved conductivity, increased pigment loadings were required which increased cost, and had a significant effect on the rheology

and printability of the composition. The present invention is based, *inter alia,* on the discovery that the use of water-containing energy cure technology can resolve the problems of the prior art and enable the production of conductive inks which gave good print definition, adhesion and which can be applied usefully by a high speed printing presses. The invention is not taught or suggested by the prior art.

The Gros patent relates to the water-based coating mixture intended for use as a corrosion protection layer. The composition contains water, polymerizable components, and a water-dispersible compound which forms free radicals upon exposure to actinic radiation, and can contain an electrically conductive substance which may be inorganic corrosion prevention or rust prevention pigment in the form of oxides, phosphides and/or phosphates of various elements. One of those elements is copper, albeit there is no disclosure of the use of elemental copper as referred at the end of page 2 of the Office Action.

It is respectfully submitted that the anticipation rejection is untenable for at least two reasons: First, the fact that it is necessary to make a selection among the various possible electrically conducting pigments is alone and sufficient. Secondly, there is no teaching or suggestion in cost that the composition, when cured, have a resistivity no greater than 1 ohm/square as measured by ASTM F-1896-98.

The Office Action effectively avers that a Gros composition will have a required conductivity based on the teaching of the reference that the content of the electrically conducting constituents will provide a sufficient electrical conductivity for welding purposes. This is an assertion of inherency, and any such assertion requires absolute certainty and may not be based on possibilities or probabilities. There is nothing in the

record which provides the necessary certainty that all values of electrical conductivity necessary for welding will satisfy the claim requirement of the resistivity no greater that 1 ohm/square.

The foregoing considerations are also applicable to the rejection based on § 103. Here, the Office Action further asserts that an experimental modification of Gros in order to ascertain optimum operating conditions would be obvious. Applicants respectfully disagree because this contention fails to take into consideration that Gros is designed to provide a composition having sufficient electrical conductivity for welding and to provide anti-corrosion properties to the substrate on which it is placed. Any experimental modification would be done with these characteristics in mind. The claimed composition, in contrast, is designed for use, *inter alia,* as an ink, which can be used to make a RFID tag. There is no reason to modify Gros to achieve such a composition.

It is important to recognize that good conductivity is not the sole requirement for a useful conductive ink even though it may be for other types of compositions such as Gros's weldable, anti-corrosive coating. Inks need good print definition, for instance, they should be able to resolve 100 micron lines, and they also need good adhesion to a range of different potential substrates, such as print receptive polyester, polycarbonate, coated and uncoated paper/board stocks and polyimide substrates. Still further, inks need to be flexible if they are to be printed onto a flexible substrate, which is often desirable for a RFID tag. Thus, the fact that a material has a degree of conductivity suitable for welding and anti-corrosion purposes provides no basis for speculating that it can be re-formulated so as to form an acceptable ink. Nothing in Gros would lead the skilled person to make the simultaneous alterations and selections as to both the identity of conductive particles

and the conductivity necessary to realize a composition within the scope of the rejected claims.

In view of the foregoing considerations, it does not appear necessary to comment on any other assertions made in the Office Action. Applicants respectfully submit that the rejection should be withdrawn and the pending application is in condition for allowance.

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That submitted,

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